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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re Application of)
Steven W. HOMANS et al.)
Serial No. 09/983,020) Examiner: To be assigned
Filed: October 22, 2001) Group Art Unit: 1645
For: RAPID DETERMINATION OF PROTEIN GLOBAL FOLDS)

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INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

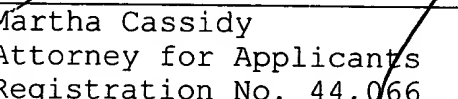
Under the provisions of 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicant submits herewith copies of publications that the Office may wish to consider in examination of the subject application. The publications are listed on the attached form PTO-1449. Applicants do not admit that the disclosed references are prior art to the subject application.

Applicants have submitted pages v-xv of reference #30, comprising the table of contents and will supply a copy of any

section of this reference should the Examiner request it.

Respectfully submitted,

By



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Enclosure(s):

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U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
	1	5,817,474		Brown	October 6, 1998
	2	6,335,196		Anderson, III et al.	January 1, 2002
	3	6,340,578		Anderson, III et al.	January 22, 2002
	4	6,111,066		Anderson, III et al.	August 29, 2000

FOREIGN PATENT DOCUMENTS

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⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language translation is attached. AB indicates that only an English language abstract is attached.



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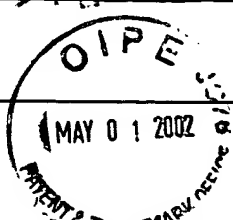
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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

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Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
/	5	Ramirez et al., "Modulation of the Alignment Tensor of Macromolecules Dissolved in a Dilute Liquid Crystalline Medium," <u>J. Am. Chem. Soc.</u> 120:9106-9107, 1998.	
,	6	Tjandra, et al., "Magnetic Field Dependence of Nitrogen-Proton <i>J</i> Splittings in ¹⁵ N-Enriched Human Ubiquitin Resulting from Relaxation...", <u>J. Am. Chem. Soc.</u> , 118:6264-6272, 1996.	
.	7	Bax et al., "High-Resolution Heteronuclear NMR of Human Ubiquitin in an Aqueous Liquid Crystalline Medium," <u>J. Biomol. NMR</u> , 10:289-292, 1997.	
,	8	Losonczi et al., "Improved Dilute Bicelle Solutions for High-Resolution NMR of Biological Macromolecules," <u>J. Biomol. NMR</u> , 12:447-451 1998.	
,	9	Prosser et al., "Use of a Novel Aqueous Liquid Crystalline Medium for High-Resolution NMR of Macromolecules in Solution," <u>J. Am. Chem. Soc.</u> 120:11010-11011, 1998.	
/	10	Clore et al., "Measurement of Residual Dipolar Couplings of Macromolecules Aligned in the Nematic Phase of a Colloidal...", <u>J. Am. Chem. Soc.</u> 120:10571-10572, 1998.	
,	11	Hansen et al., "Tunable Alignment of Macromolecules by Filamentous Phage Yields Dipolar Coupling Interactions," <u>Nature Structural Biology</u> 5(12):1065-1074, 1998.	
/	12	Kiddle et al., "Residual Dipolar Couplings as New Conformational Restraints in Isotopically ¹³ C-Enriched Oligosaccharides," <u>FEBS Letters</u> 436:128-130, 1998.	
.	13	Wang et al., "A Liquid Crystalline Medium for Measuring Residual Dipolar Couplings Over a Wide Range of Temperatures," <u>J. Biomol. NMR</u> , 12:443-446, 1998.	
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,	15	Fleming et al., "Cellulose Crystallites: A New and Robust Liquid Crystalline Medium for the Measurement of Residual Dipolar Couplings," <u>J. Am. Chem. Soc.</u> 122:5224-5225, 2000.	
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.	17	Mueller et al., "A Method for Incorporating Dipolar Couplings Into Structure Calculations in Cases of (Near) Axial Symmetry of Alignment," <u>J. Biomol. NMR</u> 18:183-188, 2000.	
.	18	Hus et al., "De Novo Determination of Protein Structure by NMR Using Orientational and Long-Range Order Restraints," <u>J. Mol. Biol.</u> 298:927-936, 2000.	
,	19	Tjandra et al., "Use of Dipolar ¹ H- ¹⁵ N and ¹ H- ¹³ C Couplings in the Structure Determination of Magnetically Oriented Macromolecules in Solution," <u>Nature Struct. Biol.</u> 4(9):732-738, 1997.	



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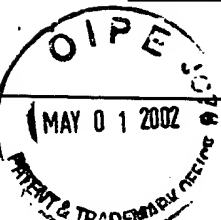
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	20	Wang et al., "Simultaneous Measurement ¹ H- ¹⁵ N, ¹ H- ¹³ C' and ¹⁵ N- ¹³ C' Dipolar Couplings in a Perdeuterated 30 kDa Protein Dissolved in a Dilute Liquid Crystalline Phase," <u>J. Am. Chem. Soc.</u> 120:7385-7386, 1998.	
	21	Ottiger et al., "Measurement of J and Dipolar Couplings from Simplified Two-Dimensional NMR Spectra," <u>J. Magn. Reson.</u> 131:373-378, 1998.	
	22	Lerche et al., "Pulse Sequences for Measurement of One-Bond ¹⁵ N- ¹ H Coupling Constants in the Protein Backbone," <u>J. Magn. Reson.</u> 140:259-263, 1999.	
	23	Tjandra et al., "Measurement of Dipolar Contributions to ¹ JCH Splittings from Magnetic-Field Dependence of J Modulation in Two-Dimensional NMR Spectra," <u>J. Magn. Reson.</u> 124:512-515, 1997.	
	24	Clore et al., "Direct Structure Refinement Against Residual Dipolar Couplings in the Presence of Rhombicity of Unknown Magnitude," <u>J. Magn. Reson.</u> 131:159-162, 1998.	
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	27	Beger et al., "Protein ϕ and ψ Dihedral Restraints Determined from Multidimensional Hypersurface Correlations of Backbone Chemical Shifts and their Use in the Determination of Protein Tertiary Structures," <u>J. Biomol. NMR</u> 10:129-142, 1997.	
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	29	Ikura et al., "A Novel Approach for Sequential Assignment of ¹ H, ¹³ C, and ¹⁵ N Spectra of Larger Proteins: Heteronuclear Triple-Resonance Three-Dimensional NMR Spectroscopy," <u>Biochemistry</u> 29:4659-4667, 1990.	
	30	Brünger, X-PLOR version 3.1: "A system for X-Ray Crystallography and NMR", Yale University Press, New Haven, CT., v-xv, 1987.	
	31	Losonczi et al., "Order Matrix Analysis of Residual Dipolar Couplings Using Singular Value Decomposition," <u>J. Magn. Reson.</u> 138:334-342, 1999.	
	32	Tolman et al., "Nuclear Magnetic Dipole Interactions in Field-Oriented Proteins: Information for Structure Determination in Solution", <u>Proc. Natl. Acad. Sci. USA</u> 92:9279-9283, 1995.	



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	33	Tjandra et al., "Direct Measurement of Distances and Angles in Biomolecules by NMR in a Dilute Liquid Crystalline Medium," <u>Science</u> 278:1111-1113, 1997.	
	34	Fowler et al., "Rapid Determination of Protein Folds Using Residual Dipolar Couplings," <u>J. Mol. Biol.</u> 304:447-460, 2000.	
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	36	Al-Hashimi et al., "Variation of Molecular Alignment as a Means of Resolving Orientational Ambiguities in Protein Structures from Dipolar Couplings," <u>J. Magn. Reson.</u> 143:402-406, 2000.	
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